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Mr. Joseph Fredle
United States Environmental Protection Agency
Emergency Response Branch, Region 5
25089 Center Ridge Road
Westlake, Ohio 44145

Subject:
Revised Second Work Plan for Characterization and Off-Site Disposal *of* North Rubble Pile, Southeast Crushed Concrete Pit, Southern Boundary Excavation Area, East and South Pads, and Soil Trinity Superfund Site
Cleveland, Ohio

Date:
August 29, 2008

Contact:
Mr. Ron Clark, P.E.

Phone:
330.374.1320

Email:
ron.clark@arcadis-us.com

Our ref:
B0083322

Dear Mr. Fredle:

ARCADIS, on behalf of Standex International Corporation, is submitting three copies of the revised *Second Work Plan for Characterization and Off-Site Disposal of North Rubble Pile, Southeast Crushed Concrete Pit, Southern Boundary Excavation Area, East and South Pads, and Soil* (SWP), as specified in Section VIII of the Administrative Settlement Agreement and Order on Consent for Removal Action (Docket No. V-W-08-C-902) (AOC). This revised SWP incorporates the information contained in our response to comment letter dated July 25, 2008.

Based on our discussions, it is our understanding, in accordance with the AOC, that the United States Environmental Protection Agency will provide written approval of the SWP.

Please feel free to call me at 330.697.2244 with any questions or comments.

Sincerely,

ARCADIS

Ron R. Clark, P.E., CP
Principal Engineer

Copies:
Ms. Stacey Constas, Standex International Corporation
Mr. William B. Popham, ARCADIS
Mr. Joseph Molina III, P.E., ARCADIS
Mr. Thomas Hite, ARCADIS

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Standex International Corporation

Second Work Plan for Characterization and Off-Site Disposal of North Rubble Pile, Southeast Crushed Concrete Pit, Southern Boundary Excavation Area, East and South Pads, and Soil

Trinity Superfund Site
Cleveland, Ohio

August 2008

Acronyms

ANSI	American National Standards Institute
AOC	Administrative Settlement Agreement and Order on Consent for Removal Action
bgs	below ground surface
CFR	Code of Federal Regulation
cy	cubic yards
DOT	Department of Transportation
FWP	*First Work Plan for Characterization and Off-Site Disposal of South and Southeast Crushed Concrete Piles and West Pad*
HASP	*Health and Safety Plan*
mg/kg	milligrams per kilogram
PCB	polychlorinated biphenyl
PPE	personal protective equipment
ppm	parts per million
QA/QC	quality assurance/quality control
Standex	Standex International Corporation
SWP	*Second Work Plan for Characterization and Off-Site Disposal of North Rubble Pile, Southeast Crushed Concrete Pit, Southern Boundary Excavation Area, East and South Pads, and Soil*
SVOC	semivolatile organic compound

TCLP	toxicity characteristic leaching procedure
USEPA	United States Environmental Protection Agency
VAP	Voluntary Action Program
VOC	volatile organic compound

1. Introduction

1.1 General

Standex International Corporation (Standex) has been named as a Potential Responsible Party for impacts observed at the Trinity Superfund Site located at 9203 Detroit Avenue in Cleveland, Cuyahoga County, Ohio (site) (Figure 1). As a result, Standex entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (AOC) with the United States Environmental Protection Agency (USEPA) on June 4, 2008 to address polychlorinated biphenyl (PCB) impacts at the site.

This *Second Work Plan for Characterization and Off-Site Disposal of North Rubble Pile, Southeast Crushed Concrete Pit, Southern Boundary Excavation Area, East and South Pads, and Soil* (SWP) has been prepared by ARCADIS, on behalf of Standex, for the implementation of second phase site activities as required by Section VIII of the AOC.

The site is located along the south side of Detroit Avenue in a mixed industrial and residential portion of the City of Cleveland. A residential apartment complex is situated adjacent and to the west of the site. An industrial manufacturing facility is located on the property situated adjacent to and to the east of the site. Norfolk Southern Railroad and Cuyahoga County Regional Transit Authority commuter rail lines are situated to the south of the site.

The site is trapezoidal in shape. The western third of the site contains a gravel area to the north and a concrete pad (West Pad) to the south. The central third of the property contains a rubble pile (North Rubble Pile) to the north, a concrete pad in the middle (East Pad), a crushed concrete pile (South Crushed Concrete Pile), and several excavated areas containing crushed concrete to the south (Southeast Crushed Concrete Pit and Southern Boundary Excavation Area). The eastern third of the site contains a gravel area to the north and a crushed concrete pile (East Crushed Concrete Pile) to the south.

The objective of this project is to characterize and remediate PCB-impacted materials at the site to an end risk-based standard. In general, the overall project components are summarized below and are identified on the attached Figure 2, which was adapted from HZW Environmental Consultants, LLC's Figure 1:

- concrete slabs, which include the West Pad, East Pad, and South Pad
- crushed concrete and brick material in piles and pits, which include the North Rubble Pile (Pile 3), South Crushed Concrete Pile (Pile 1), Southeast Crushed Concrete Pit (Pit 1), and the Southern Boundary Excavation Area
- on-site soil underneath the existing concrete pads and in the northwest area

In accordance with Section VIII of the AOC, two work plans will be prepared and submitted to the USEPA for this project. The *First Work Plan for Characterization and Off-Site Disposal of South and Southeast Crushed Concrete Piles and West Pad* (FWP) (ARCADIS, 2008a) was previously submitted to the USEPA on June 18, 2008. This SWP covers the characterization and removal of materials with PCB concentrations greater than 16 milligrams per kilogram (mg/kg or parts per million [ppm]), in the event the application referenced in AOC Paragraph 14(6) is not approved by the USEPA within 120 days of the effective date of the AOC for the:

1. North Rubble Pile (Pile 3)
2. Southeast Crushed Concrete Pit (Pit 1)
3. Southern Boundary Excavation Area Pit (Pit 2) (also called South Crushed Concrete Tank Pit)
4. East Pad
5. South Pad
6. on-site soil underneath the existing concrete pads, the area between Pit 2 and the South Pad, and a portion of the northwest area that warrants further delineation

1.2 Background

The following background information was taken from the AOC and the USEPA report titled *Site Assessment Report for the Trinity Site Cleveland, Cuyahoga County, Ohio* (February 14, 2008).

The City of Cleveland initiated a Brownfield project at the site in 2005 with the purpose to provide a property that could be developed for commercial/industrial use. The City of Cleveland assessed the property, razed buildings, and removed tanks in preparation for site restoration. During the later stages of their assessment, it was determined that the demolition materials, as well as some soils on and near the site, were impacted with PCBs. Later assessments have indicated the presence or potential presence of mercury, heavy metals, chlorinated solvents, and other contaminants. In 2007, the City of Cleveland requested assistance from the USEPA that resulted in an on-site and off-site assessment and a limited remediation program.

The City of Cleveland contacted the USEPA in May 2007 and requested assistance regarding PCBs that were found by the City of Cleveland during demolition activities. The USEPA conducted site assessment activities at the site from May 2007 through November 2007. Based on the USEPA's site assessment activities, the following levels of PCBs were found at the site:

- on-site soils – 0.038 to 5,700 mg/kg
- off-site residential soils – 0.12 to 11 mg/kg
- on-site sub-slab soils – 0.067 to 77 mg/kg
- concrete cores – 0.046 to 10,000 mg/kg
- on-site sewers and drains – 0.13 to 770 mg/kg
- on-site crushed concrete – 0.59 to 110 mg/kg

Additional details regarding the site's use and history are provided in the AOC (USEPA, 2008).

1.3 Purpose and Objectives

This SWP outlines the procedures for the characterization and proper off-site disposal of materials containing PCB concentrations above 16 ppm or an alternative concentration as approved by the USEPA pursuant to Paragraph 14(6) of the AOC (USEPA, 2008) for the items referenced in Section 1.1 that contain the following estimated quantities:

- North Rubble Pile – approximately 9,200 cubic yards (cy)
- Southeast Crushed Concrete Pit (Pit 1) – approximately 210 cy
- South Boundary Excavation Area (Pit 2 area) – approximately 1,685 cy
- East Pad – approximately 61,580 square feet
- South Pad – approximately 5,500 square feet
- on-site soil underneath the existing concrete pads and northwest area – approximately 82,220 square feet

This SWP includes the following:

- Procedures to characterize the North Rubble Pile to determine PCB concentrations and for waste disposal characterization and off-site disposal acceptance.
- Procedures for the characterization of the Southeast Crushed Concrete Pit and Southern Boundary Excavation Area using a composite sampling technique.
- Additional characterization of the East Pad and South Concrete Pad to define PCB concentrations in concrete and underlying soil.
- Procedures for the excavation and off-site disposal of all materials at an approved off-site disposal facility, in accordance with the USEPA's Off-Site Rule, 40 Code of Federal Regulations (CFR) Part 300.440, with a PCB concentration of greater than 16 ppm of the USEPA-approved alternative PCB cleanup concentration in the:
  - North Rubble Pile (Pile 3)
  - Southeast Crushed Concrete Pit (Pit 1)
  - Southern Boundary Excavation Area (Pit 2)
  - East Pad
  - South Pad

- on-site soil underneath the existing concrete pads, area between southern excavated area and South Pad, and a portion of the northwest area warranting further delineation

Work shall be performed consistent with the disposal requirements in 40 CFR Part 761.61(a)(5)(i)(B) of the regulations implementing the Toxic Substances Control Act, 15 U.S.C. Part 2601 et seq. In accordance with Paragraph 15(b) of the AOC (USEPA, 2008), characterization, transportation, and disposal of PCBs above 16 ppm or a USEPA-approved alternative will be initiated within 120 days of the effective date of the AOC.

- A schedule for implementing this SWP.

In addition, a *Health and Safety Plan* (HASP) (ARCADIS, 2008b) has been conditionally approved by the USEPA as a separate document. The HASP is consistent with the USEPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992) and complies with currently applicable Occupational Safety and Health Administration regulations found in 29 CFR Part 1910. The HASP will be used to confirm the overall protection of public health and safety during the performance of on-site work required under the AOC (USEPA, 2008).

1.4 Special Considerations

Laboratory analysis described in this SWP will be conducted by a Voluntary Action Program- (VAP-) certified analytical laboratory (as codified at OAC 3745-300-04), TestAmerica Laboratories, located in North Canton, Ohio. It should be noted that certain tests, such as analysis of concrete for PCBs, are not certified by the VAP. Soil testing for PCBs is certified by the VAP and will be done accordingly (i.e., VAP certifications will be obtained where it is applicable).

In order to minimize matrix effects due to the nature of concrete, ARCADIS will be using a 5-gram initial weight instead of the 30-gram initial weight, as recommended by the method for the 3500B extraction. The sample will be thoroughly homogenized previous to weighing, and the modification will elevate the reporting limit to 100 micrograms per kilogram for concrete matrix, as received.

Twenty-three monitoring wells were reported to have been installed on site by the City of Cleveland. Three of these monitoring wells were visually identified on site on July 25, 2008 during a site visit with the City of Cleveland's consultant who installed

the wells. A best effort will be made to protect those three identified wells during construction.

Visual verification of the other reported 20 wells was not obtained, so their protection during remediation activities is not guaranteed.

Field quality assurance/quality control (QA/QC) measures shall be implemented in accordance with Paragraph 17 of the AOC (USEPA, 2008), as described in Section 2.2.

1.5 Project Team

The proposed project team is presented below. The team members were selected based on individual project experience related to the specific tasks required for this site. A brief description of each individual's project responsibilities is provided below:

- *Mr. Ronald R. Clark, P.E., Certified Professional* – Mr. Clark will serve as Project Coordinator and Certified Professional.

- *Mr. Tom Hite, Project Manager/Senior Geologist* – Mr. Hite will be the Field Manager for sampling and characterization. Mr. Hite will also be Mr. Clark's designated Alternate Project Coordinator for observation of field activities, should such oversight be necessary when Mr. Clark is not available.

- *Ms. Cindy Capell, Geologist and Mr. Stuart Wells, Geologist* – Ms. Capell and Mr. Wells will be responsible for the on-site sampling and characterization activities.

- *Mr. Joe Molina, P.E., Construction Manager* – Mr. Molina will be responsible for all construction-related activities at the site.

- *Mr. Bill Popham, Vice President* **–** Mr. Popham will serve as the overall project lead and provide oversight and coordination.

2. North Rubble Pile, Southeast Crushed Concrete Pit and Southern Boundary Excavation Area, Remaining Pads, and Soil Assessment

2.1 Introduction

The following outlines the sampling strategy and methods for the North Rubble Pile, Southeast Crushed Concrete Pit and Southern Boundary Excavation Area, remaining pads, and soil to characterize these areas for off-site transportation and disposal. It is anticipated that the North Rubble Pile will be characterized first, followed by the characterization of the remaining pads and Southeast Crushed Concrete Pit and Southern Boundary Excavation Area.

2.1.1 North Rubble Pile

The North Rubble Pile is composed of unprocessed demolition debris that ranges greatly in size. The larger fractions are comprised of full bricks and concrete slab sections. Initially, 10 individual bricks will be collected from across the pile, pulverized by the laboratory, and analyzed for PCBs. In order to split samples with the USEPA, each brick will be broken in half in the field and sent to each respective laboratory for pulverization and analyzed for PCBs. In addition, 10 samples of pulverized concrete from slab sections with no visible staining will also be collected and analyzed for PCBs. In addition, a select number of slab sections with visible staining will also be sampled and analyzed for PCBs, the number and location to be mutually agreed upon between ARCADIS and the USEPA. If the brick and concrete slab section analytical data indicates PCB concentrations are less than 16 ppm or the USEPA-approved alternative cleanup concentration, these materials will be mechanically separated. Material that does not pass through a 3-inch screen will be staged as “non-PCB material” and remain on site. The material that passes through the 3-inch screen (i.e., 3-inch minus material) will be staged separately and further characterized for disposal via the FWP (ARCADIS, 2008a) seven-point composite sampling technique (i.e., collecting composite samples from 200 to 250 cy piles). Seven discrete samples will be collected for each 200 to 250 cy increment (pile) and those seven samples will be composited by the laboratory and analyzed for PCBs. Based on the analytical results of each composite sample, the initial seven discrete samples may be analyzed individually in an effort to reduce the volume of material to be disposed off site.

This material will be windrowed and demarcated in 200 to 250 cy increments. Staging areas outside the current pile footprint will be covered with a layer of polyethylene before the material is windrowed.

If the brick and concrete slab section analytical data indicates PCB concentrations are greater than 16 ppm or the USEPA-approved alternative cleanup PCB concentration, additional characterization will be performed that would likely not involve mechanically separating the material but windrowing the entire pile and sampling as described above.

Our objective of the sampling is to also confirm that samples are representative of the pile's contents (i.e., concrete, brick, and aggregate). This sampling is field iterative where subsequent courses of action are based on previous analytical results.

Further, an additional waste characterization seven sample composite of the 3-inch minus material will be collected and analyzed by the laboratory for additional disposal parameters, including volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals using the toxicity characteristic leaching procedure (TCLP), as well as corrosivity, flashpoint, cyanide, sulfide, and any other parameter required by the disposal facility.

2.1.2 Southeast Crushed Concrete Pit and Southern Boundary Excavation Area

The Southeast Crushed Concrete Pit will be divided into nine equal sections and a soil boring will be advanced via direct-push technology in each section to the maximum fill depth, which is anticipated to be approximately 16 feet or less. Each section will be 250 cy or less.

The borings will be advanced in 4-foot lifts, and material collected from each lift and depth will be composited in the field on a per-boring basis. Each individual boring's samples will be composited by the laboratory for a single composite PCB analysis totaling nine tests for the Southeast Crushed Concrete Pit

The Southern Boundary Excavation Area will be divided into 16 equal sections and a soil boring will be advanced via direct-push technology in each section to the maximum fill depth, which is anticipated to be approximately 16 feet or less. The borings will be advanced in 4-foot lifts, and material collected from each lift and depth will be composited in the field on a per-boring basis. Each individual boring's samples will be composited by the laboratory for a single composite PCB analysis totaling 16 tests for the Southern Boundary Excavation Area.

The composite samples may also be composited further and testing done for waste characterization analysis for VOCs, SVOCs, and metals using TCLP, as well as

corrosivity, flashpoint, cyanide, sulfide, and any other parameters required by the disposal facility.

2.1.3 Remaining Pads – East Pad and South Pad

The East Pad will be gridded and a minimum of 40 pulverized concrete samples will be collected and analyzed for PCBs. The South Pad will be offset gridded in 10-foot increments and 49 pulverized concrete samples will be collected and analyzed for PCBs. Pad sample locations are depicted on Figure 3. Additional sampling may be conducted, as warranted, to delineate areas where PCB concentrations exceed the cleanup concentrations.

Should it be required by the disposal facility, an additional composite sample will be collected and analyzed by the laboratory for additional disposal parameters, including VOCs, SVOCs, and metals using TCLP, as well as corrosivity, flashpoint, cyanide, sulfide, and any other parameter required by the disposal facility.

2.1.4 Soil

In areas where concrete pads require removal, samples of the underlying soil will be collected as follows: 0 to 3 inches below ground surface (bgs), 3 to 12 inches bgs, 12 to 24 inches bgs, 24 to 36 inches bgs, and 36 to 48 inches bgs. Initially, only the 0 to 3-inch bgs sample will be analyzed using a 24-hour turnaround time for analysis. If this sample exceeds 16 ppm or the USEPA-approved alternative cleanup concentration, ARCADIS will start analyzing the deeper samples in a progression of depth using a 24-hour turnaround time for analysis until the PCB concentration is less than 16 ppm or the USEPA-approved alternative cleanup concentration. Samples will be collected via direct-push technology at locations agreed upon by the USEPA and ARCADIS following receipt of the pad results. Initial soil sample locations are depicted on Figure 4.

The area between the South Concrete Pad and the South Excavated Area will be gridded and initially 12 locations will be sampled, following the same procedure as described above, and analyzed for PCBs. It is possible that additional samples will be collected and analyzed to better delineate any sample point with a PCB concentration greater than 16 ppm.

The area north of the West Pad has been characterized by the USEPA for PCBs; however, 18 additional samples are planned to be collected and analyzed for PCBs in

this area to improve the delineation of the soils requiring removal. Again, the sampling procedure described above will be followed. It is possible that additional samples will be collected and analyzed to better delineate any sample point with a PCB concentration greater than 16 ppm.

Following excavation of the east concrete pile (FWP, ARCADIS, 2008a) eight confirmation soil samples will be collected via the hand sampling methods from the upper 6 inches.

Additional soil analysis for total mercury and total heavy metals (8 Resource Conservation and Recovery Act) will be completed: one from the northwest and two from the northeast portions of the site.

2.2 Quality Assurance/Quality Control Measures

All sampling and analyses performed pursuant to the AOC will conform to the USEPA direction, approval, and guidance regarding sampling, QA/QC, data validation, and chain of custody procedures.

The laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate USEPA guidance. QA/QC practices will follow, as appropriate, *Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures* (Office of Solid Waste and Emergency Response Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Laboratory services will be provided by laboratories that have a documented quality system that complies with American National Standards Institute (ANSI)/American Society for Quality Control E-4 1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI, January 5, 1995), and *EPA Requirements for Quality Management Plans* (QA/R-2) (USEPA/240/B-01/002, March 2001), or equivalent documentation, as determined by the USEPA. The USEPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program as meeting the Quality System requirements.

Upon request by the USEPA, Standex will have such a laboratory analyze samples submitted by the USEPA for QA monitoring. Standex will provide to the USEPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

Upon request by the USEPA, Standex will allow the USEPA or its authorized representatives to take, split, and/or duplicate samples. Standex will notify the USEPA not less than 3 business days in advance of any sample collection activity, unless shorter notice is agreed to by the USEPA. The USEPA shall have the right to take any additional samples that the USEPA deems necessary. Upon request, the USEPA shall allow Standex to take, split, or duplicate samples of any samples it takes as part of its oversight of Standex's implementation of the work.

2.3 Sample Designation

North Rubble Pile samples will carry the designation ARC-NRP-1,2,3,4 – and proceed in numerical order. "B" designation will be used for Bricks and "C" for Concrete.

Southeast Crushed Concrete Pit and South Boundary Excavation Area samples will carry the designation ARC –SECCP or SBEA-1, 2, 3, 4 – and proceed in numerical order.

Pad samples will carry the designation ARC-EP or SP-1, 2, 3, 4 – and proceed in numerical order.

Soil delineation samples will carry the following prefix designation and proceed in numerical order for each area. Post-removal confirmation samples will carry a "C" designation with numerical sequence (e.g., ARC-SWPC-1,2,3).

- ARC-SWP: Soil beneath West Pad
- ARC-SEP: Soil beneath East Pad
- ARC-SSP: Soil beneath South Pad
- ARC-SECCP: Soil beneath East Crushed Concrete Pile
- ARC-SNE: Soil Northwest Area or north of West Pad
- ARC- SSA: Soil South Area

2.4 Sampling Equipment and Procedures

2.4.1 Brick Samples from North Rubble Pile

Individual bricks will be obtained, wrapped in foil, labeled, double-bagged, and sent to the laboratory where pulverization will occur, followed by PCB analysis. Brick and concrete sample locations will be selected by the USEPA. Bricks will split in half with a hammer and divided between ARCADIS and the USEPA. Brick halves will be sent to our respective laboratories for pulverization and testing.

2.4.2 Pulverization Concrete Samples from the North Rubble Pile, East Pad, and South Pad

A paper template will be placed on the concrete surface at the sampling location and a 1-inch-diameter masonry bit attached to a hand-held rotary percussion hammer will be used to core the concrete to a depth of 6 centimeters. The resulting powder from the pulverization will be collected from the paper and transferred to laboratory-supplied sampling jars for PCB analysis. This method confirms that samples are representative of concrete (i.e., both the more porous cement and the less porous aggregate). This procedure has been used on previous USEPA Region 5 sites with success in providing representative PCB concentrations in concrete slabs.

For concrete pulverization samples, volume will be limited. Therefore, multiple concrete boreholes will be advanced at each sample location, and the resulting concrete powder from those borings homogenized in the field, then divided two ways. The first and second sample aliquots will be split between ARCADIS and the USEPA. Concrete selected for pulverization samples will be removed from the rubble pile via tracked excavator and placed on the ground before sampling.

2.4.3 Soil Samples

Soil samples and the material composing the Southeast Crushed Concrete Pit and South Boundary Excavation Area will be collected via direct-push technology, which utilizes a specially designed lined, stainless sampler that is driven into the ground via static force and percussion. The sampler is removed following a given run and the liner extracted and split lengthwise facilitating sample collection. A large diameter core barrel with core catcher will be used since the material is fill.

2.5 Sample Handling – Chemical Analysis

2.5.1 Sample Preservation

Samples collected for chemical analysis will be stored on ice in a cooler immediately after collection.

2.5.2 Quality Assurance/Quality Control Samples

2.5.2.1 Blanks

Since no VOCs are of concern, no trip blanks are planned; however, equipment blanks will be collected to verify that sampling equipment has not affected the integrity of the field samples.

To evaluate whether the sampling device has been effectively cleaned, equipment blanks will be prepared by rinsing the sampling device with laboratory-supplied water, transferring the water to bottles, and submitting the sample to the laboratory for analysis. The water will be collected in the properly preserved containers specified by the laboratory. The sample will be analyzed by the identical methods as the soil sample. An equipment blank will be collected for each analytical group to be analyzed on a given day.

The number of equipment blanks analyzed for a class of compounds will be equal to at least 10 percent of the total samples to be analyzed for those methods, with a minimum of 1 per day.

2.6 Chain of Custody

The chain of custody will allow for the tracking of possession and handling of individual samples from the time of field collection through laboratory analysis. The chain of custody program will include sample labels, sample seals, field logbook, chain of custody form/sample analysis request sheet, and laboratory logbook. All chain of custody procedures will be performed in accordance with standards of the industry

All sample labels will contain the following information:

1. sample ID number

2. name of collector
3. date and time of collection
4. place of collection
5. parameters required for analysis

2.6.1 Sample Seal

A seal will be placed on the sample container or on the shipping container to confirm that samples have not been disturbed during transportation.

2.6.2 Field Logbook

An up-to-date field logbook will be kept by each sampling team to document daily events. The logbook will include a general list of tasks performed, additional data or observations not listed on field data sheets, and document communications with on-site personnel or visitors as it applies to the project.

2.6.3 Chain of Custody Record Sheet

The chain of custody record will be maintained to trace sample possession and time of collection. The chain of custody will accompany each sample and record the:

1. sample number
2. signature of collectors
3. date and time of collection
4. sample type
5. sample location identification
6. number of containers
7. analytical parameters required

8. signature of relinquished and dates of possession by each party

9. preservatives

2.6.4 Laboratory Logbook

The laboratory will maintain a record of the processing steps that are applied to each sample (i.e., sample preparation techniques, instrumental methods, experimental conditions, QC results). The time, date, and name of person performing each processing step will also be recorded.

2.7 Classification and Field Descriptions

Samples will be classified in the field consistent with ARCADIS Standard Operating Procedures. In addition, all pertinent observations noted during sample collection will be noted on logs or in field notes.

2.8 Decontamination of Equipment

2.8.1 Tracked Excavator Bucket

The tracked excavator bucket will be decontaminated prior to arrival on site. Dry decontamination methods will be employed between sample locations (i.e., confirming that samples are collected from material that has not touched the bucket of the excavator).

2.8.2 Masonry Bits

Masonry bits will be scrubbed in Liquinox/potable water bath and rinsed with distilled water and hexane or other acceptable solvent.

All rinsates will be placed in Department of Transportation- (DOT-) approved 55-gallon steel drums for subsequent characterization and off-site disposal.

2.8.3 Direct Push

Since the sampling tube is lined, down hole tooling will be decontaminated via pressure washer or steam cleaner between borings.

2.9 Disposal of Cuttings, Unused Soil Samples, Personal Protective Equipment

Minimal cuttings and personal protective equipment (PPE) should be generated during characterization activities; however, materials generated will be properly stored and secured in DOT-approved 55-gallon drums, or equivalent approved containers, and labeled for characterization and off-site disposal.

3. North Rubble Pile, Concrete and Soil Removal, and Off-Site Disposal

3.1 Stormwater/Sedimentation/Erosion/Dust Control Plan

3.1.1 Temporary Sedimentation and Erosion Control Measures

Temporary sedimentation and erosion control measures for concrete/soil removal areas will be installed along the perimeter of the work areas, as necessary. The control measures for the excavation will consist of hay bales and/or silt fence. In addition, storm sewer manholes within the work area that could receive stormwater runoff from the work area will be wrapped with filter fabric to prevent any solids from entering the storm sewer.

These temporary control measures will be installed and maintained for the duration of the project. Daily inspections of these control measures will be conducted and maintenance completed, as necessary. Any excessive soil accumulation along the control measures will be removed and managed accordingly. Prior to demobilization from the site, the temporary sedimentation and erosion control measures will be removed and properly disposed off site.

3.1.2 Air Monitoring

Air monitoring will be performed during all ground intrusive activities in accordance with the requirements included in the HASP (ARCADIS, 2008b). The air monitoring activities will be implemented to verify that site workers and the surrounding community are not adversely impacted by the concrete/soil removal activities. As indicated in the HASP, the air monitoring activities will be performed to address particulate exposure and action levels that have been established for the site to determine the appropriate PPE to be used by site personnel, and whether or not control measures for dust emissions are necessary.

The air monitoring activities will be accomplished by using two particulate meters (or equal), with one meter positioned immediately downwind of the work zone and the other meter positioned downwind perimeter of the site. The particulate meter will be positioned such that the sample inlet will be located at a height approximating the breathing zone. The particulate meters will be calibrated in accordance with the manufacturer's instructions and will provide a continuous readable particulate dust concentration, with the results being recorded in a data logger.

The locations of the two particulate meters will be established each day, prior to commencing site activities, and depending on the predominant wind direction at the start of the day's activities. If wind direction shifts radically during the workday, the particulate meters will be relocated so that the downwind impacts are maintained. Any changes will be documented in a field logbook.

Normal operating conditions for fugitive dust control are dictated by ambient air monitoring results. Action levels applicable to this project are included in the HASP (ARCADIS, 2008b). If an exceedance to the air monitoring action levels occurs, the first step will be to identify the potential sources (e.g., excavation face, vehicular traffic) that represent the primary contributing factor to the exceedance. This identification step will be completed as quickly as possible, primarily by visual inspection of those potential sources that appear to be generating the most dust or appear to be the most heavily impacted.

3.1.3 Dust Control Plan

Upon identifying specific contributing sources, dust control measures (i.e., water spray from an on-site water truck) will be available at the site and used when necessary. After implementing dust control measures, the perimeter air monitoring results will be evaluated to determine the effectiveness of the additional controls. If two successive readings indicate that the site is still not within the required action levels, additional control measures will be implemented as needed.

Temporary shutdown of all or part of the site operations will be initiated when the use of dust control measures do not lower perimeter airborne particulate concentrations to below the established action levels. Such a condition could be associated with unstable weather conditions (e.g., high winds). If operations or a portion of operations are shutdown temporarily, potential particulate emissions associated with wind erosion will be addressed through additional application of water spray or covering with polyethylene in the specific areas of concern.

3.2 Security Measures

In accordance with Paragraph 14.2 in the AOC (USEPA, 2008), site security will be implemented once equipment has been mobilized to the site. Generally, site security will be managed by ARCADIS personnel during daily site activities (approximately 12 hours per day). Site security for the remaining 12 off-hours, as well as 24-hour coverage on off-days (i.e., holidays and weekends), will be provided by a local security

company. Overall, these site security measures will provide for 24/7 coverage. As such, fence repair will be performed only when required.

3.3 Waste Material Loading and Off-Site Transportation and Disposal

Upon USEPA approval or disapproval of the application for an alternative PCB cleanup level, as provided by Paragraph 14(6) of the AOC (USEPA, 2008), ARCADIS will mobilize on site to implement the removal action for all materials containing PCB concentrations above 16 ppm or the USEPA-approved alternative cleanup concentration. The work activities associated with this phase of work includes:

- Materials from the North Rubble Pile having PCB concentrations greater than 16 ppm or the USEPA-approved alternative cleanup concentration will be loaded into transport vehicles for off-site disposal.

- All concrete materials from the Southeast Crushed Concrete Pit and Southern Boundary Excavation Area having shown to have PCB concentrations greater than 16 ppm or the USEPA-approved alternative cleanup concentration will be loaded into transport vehicles for off-site disposal.

- Breaking up and removing the East Pad and South Pad, and properly sizing (to be determined) of the concrete slab for off-site disposal of the concrete materials having PCB concentrations greater than 16 ppm or the USEPA-approved alternative cleanup concentration

- Site soil that is shown to have PCB concentrations greater than 16 ppm or the USEPA-approved alternative cleanup concentration will be loaded into transport vehicles for off-site disposal.

- Any material addressed by the FWP (ARCADIS, 2008a) that is shown to have PCB concentrations greater than 16 ppm or the USEPA-approved alternative cleanup concentration will be loaded into transport vehicles for off-site disposal.

3.3.1 Material Loading

It is anticipated that a tracked excavator will be used to excavate soil, and dump trucks/trailers will be used to transport excavated soils to the off-site disposal facility. The excavation equipment used will be appropriately sized to meet the maximum

anticipated excavation work effort, and will serve as a dedicated piece of equipment that will remain within the confines of the site to the extent practicable. Also, dump trucks/trailers will be positioned on clean surfaces, to the extent practicable, or undisturbed surface soil, to minimize decontamination efforts.

3.3.2 Material Transportation

Hazardous substances/hazardous waste will be transported and disposed at a USEPA-approved disposal facility in accordance with the USEPA's Off-Site Rule, 40 CFR Part 300,440. Once the appropriate approvals have been received from the off-site disposal facilities, transport vehicles will be scheduled for each waste classification. As indicated previously, it is anticipated that the excavated/removed materials will be direct-loaded into transport vehicles for off-site disposal. After each transport vehicle is loaded, a canvas tarpaulin will be placed over the top of the soil container and secured, and the wheels and undercarriage of the transport vehicle will be observed for accumulated soil and, if necessary, subsequently decontaminated. As appropriate, a truck tire decontamination area will be established at the exit point for truck traffic leaving the site.

Prior to exiting the site, either a hazardous waste manifest or nonhazardous bill of lading form will be filled out and signed appropriately (each form will require a signature from the truck driver and a Standex representative or agent) for each transport vehicle, the appropriate placards/labels will be affixed, and vehicles will be checked for hauling permits, as necessary.

3.3.3 Material Disposal

Before shipping any regulated hazardous substances, pollutants, or contaminants from the site to an off-site location, the USEPA's certification will be obtained, certifying that the proposed receiving facility is operating in compliance with the requirements of Comprehensive Environmental Response, Compensation, and Liability Act Section 121(d)(3), 42 U.S.C. Part 9621 (d)(3), and 40 CFR Part 300.440. Standex will only transport regulated hazardous substances, pollutants, or contaminants from the site to an off-site disposal facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

Prior to any off-site shipment of regulated waste material from the site to an out-of-state waste management facility, Standex will provide written notification of such shipment of

the regulated waste material to the appropriate state environmental official in the receiving facility's state and to the On-Scene Coordinator.

The written notification will include the following information:

1. The name and location of the facility to which the regulated waste material is to be shipped.

2. The type and quantity of the regulated waste material to be shipped.

3. The expected schedule for the shipment of the regulated waste material.

4. The method of transportation.

The state in which the planned receiving facility is located will be notified in the event of major changes in the shipment plan, such as the decision to ship the regulated waste material to another facility within the same state, or to another facility in different state.

The identity of the receiving facility and state will be determined following the characterization process referenced above. Therefore, information required by Paragraph 21(a) and 21(b) of the AOC (USEPA, 2008), as referenced above, will be provided as soon as practicable after the characterization process has been completed and before the regulated waste material is transported off site for disposal.

4. Schedule

SWP characterization activities associated with the North Rubble Pile, Southeast Crushed Concrete Pit and Southern Boundary Excavation Area, South Concrete Pad, and soils underlying the removed West Pad, between the South Concrete Pad and the Southern Boundary Excavation Area, and further delineation of soils north of the West Pad, will be initiated within 10 business days of completion of FWP (ARCADIS, 2008a) removal activities. Characterization activities associated with the East Pad will be initiated within 5 business days of removal of the North Rubble Pile. Characterization of soils underlying areas of the East Pad concrete removal and any remaining areas requiring confirmation sampling will be initiated within 5 business days of removal of East Pad concrete. All samples are scheduled for a 24- or 48-hour laboratory analysis turnaround time. Characterization and/or delineation sampling of any area, with the possible exception of the North Rubble Pile, is not anticipated to take more than 7 days. The 7 days are only needed if soil samples, to the total depth of 4 feet, require PCB analysis. An exception to the 7 days may be the confirmation sampling of soils if additional soils removal is determined to be necessary.

Removal, transportation, and disposal activities will not begin until the USEPA has approved or disapproved the application for a PCB cleanup alternative. At this time, it is anticipated that removal, transportation, and disposal of current identified areas in this SWP will be completed within approximately 60 work days of initiation of removal activities. One potential exception is areas where confirmation sampling show additional removal activities are necessary.

Within 75 days of the last off-site shipment of PCB material, a final report summarizing the actions taken to comply with the AOC will be submitted to the USEPA.

5. References

American National Standards Institute. 1995. *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*. January 5, 1995.

ARCADIS. 2008a. *First Work Plan for Characterization and Off-Site Disposal of North Rubble Pile, East and South Pad, and Soil*. Trinity Superfund Site, Cleveland, Cuyahoga County, Ohio. June 18, 2008.

ARCADIS. 2008b. *Health and Safety Plan*. Trinity Superfund Site, Cleveland, Cuyahoga County, Ohio. June 18, 2008.

United States Environmental Protection Agency. 2008. *Site Assessment Report for the Trinity Superfund Site Cleveland, Cuyahoga County, Ohio*. February 14, 2008.

United States Environmental Protection Agency. 2001. EPA *Requirements for Quality Management Plans*. QA/R-2. March 2001.

United States Environmental Protection Agency. 1990. *Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures*. Office of Solid Waste and Emergency Response Directive No. 9360.4-01. April 1, 1990.

ARCADIS

Figures

0 500 FT

PLOT SCALE: 1" = 500'

OHIO

LEGEND

PROPERTY BOUNDARY (APPROXIMATE)

NOTES:

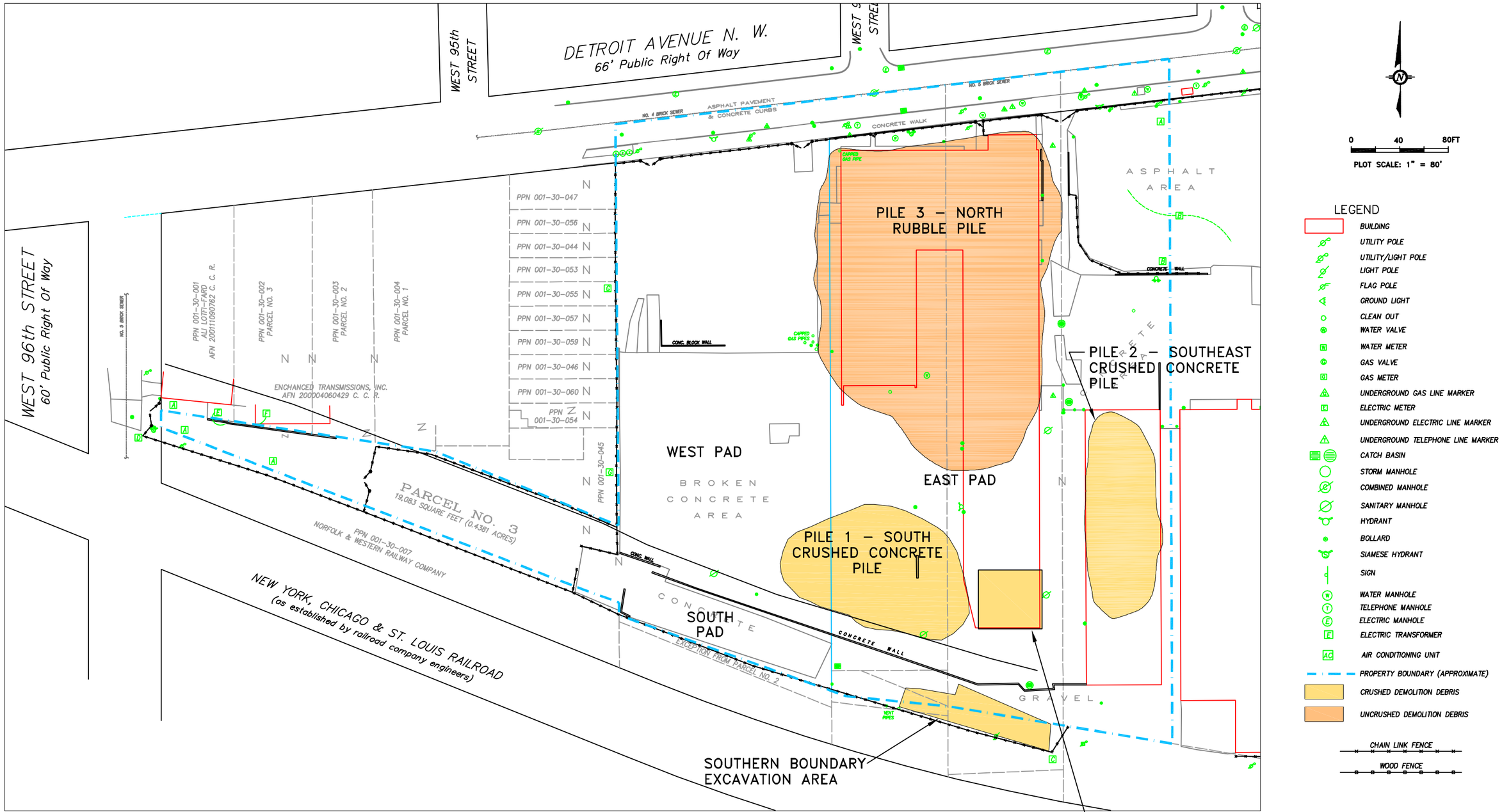
1. AERIAL DATED MARCH 29, 2007.
2. PROPERTY BOUNDARY ESTIMATED FROM DRAWINGS PROVIDED BY OTHERS.

STANDEX INTERNATIONAL
9203 DETROIT AVENUE, CLEVELAND, OHIO

SITE LOCATION MAP

ARCADIS

FIGURE
1



0 40 80FT

PLOT SCALE: 1" = 80'

LEGEND

- BUILDING
- UTILITY POLE
- UTILITY/LIGHT POLE
- LIGHT POLE
- FLAG POLE
- GROUND LIGHT
- CLEAN OUT
- WATER VALVE
- WATER METER
- GAS VALVE
- GAS METER
- UNDERGROUND GAS LINE MARKER
- ELECTRIC METER
- UNDERGROUND ELECTRIC LINE MARKER
- UNDERGROUND TELEPHONE LINE MARKER
- CATCH BASIN
- STORM MANHOLE
- COMBINED MANHOLE
- SANITARY MANHOLE
- HYDRANT
- BOLLARD
- SIAMESE HYDRANT
- SIGN
- WATER MANHOLE
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- ELECTRIC TRANSFORMER
- AIR CONDITIONING UNIT
- PROPERTY BOUNDARY (APPROXIMATE)
- CRUSHED DEMOLITION DEBRIS
- UNCRUSHED DEMOLITION DEBRIS
- CHAIN LINK FENCE
- WOOD FENCE

NOTE:

1. PROPERTY BOUNDARY ESTIMATED FROM DRAWINGS PROVIDED BY OTHERS.

STANDEX INTERNATIONAL
9203 DETROIT AVENUE, CLEVELAND, OHIO

SITE LAYOUT

ARCADIS

FIGURE 2

CITY:(DUBLIN) DIV/GROUP:(SER2) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(T. HITE) TM:(T. HITE) LYR:(Opt)ON=*;OFF=*REF*
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XREFS: IMAGES: PROJECTNAME: ---
SECTION07_TIF
standex soil piles.JPG
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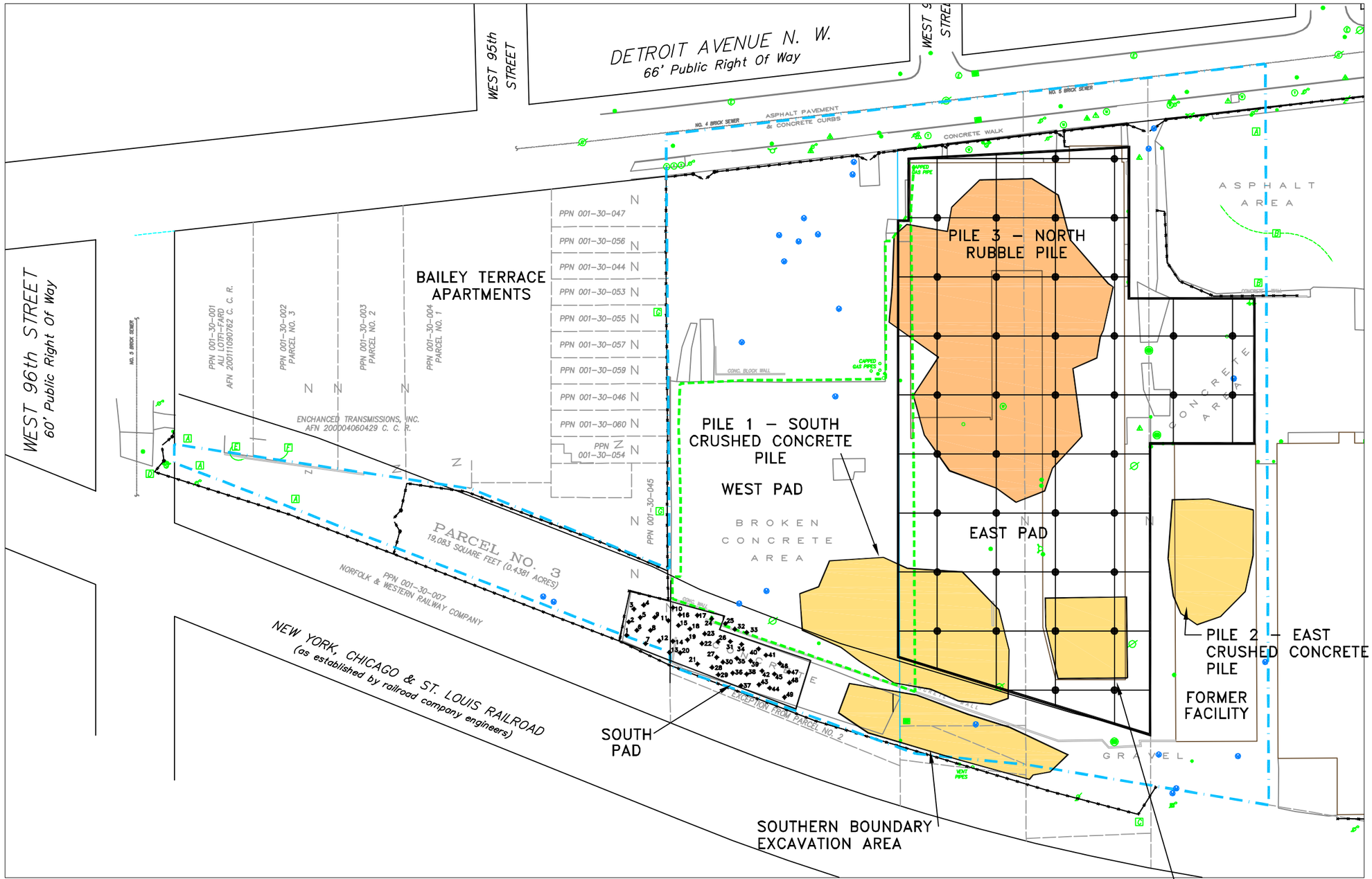


NOTE:

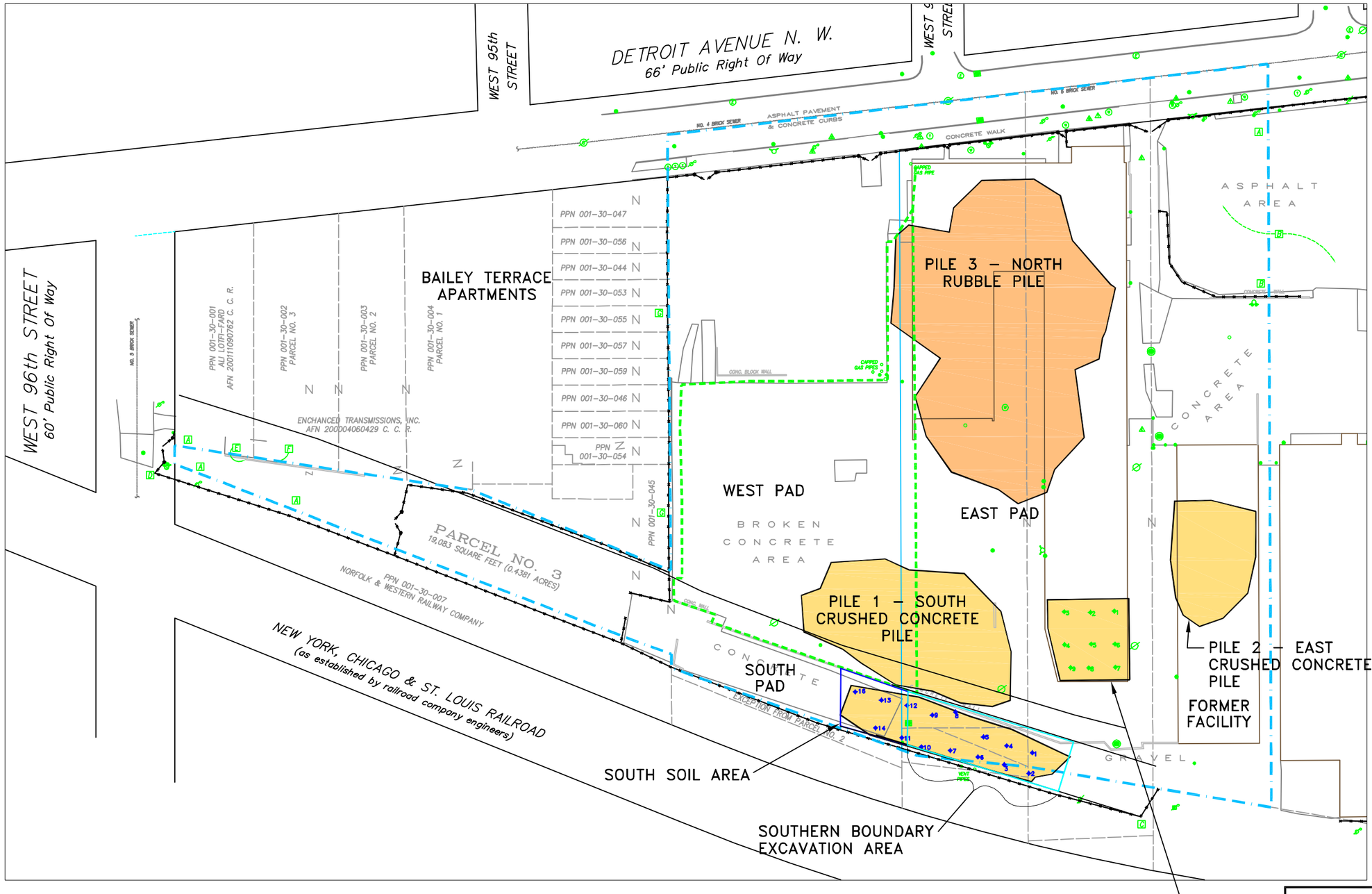
1. PROPERTY BOUNDARY ESTIMATED FROM DRAWINGS PROVIDED BY OTHERS.

STANDEX INTERNATIONAL
9203 DETROIT AVENUE, CLEVELAND, OHIO

SECOND WORK PLAN SAMPLE LOCATIONS FOR EAST PAD AND SOUTH PAD

ARCADIS

FIGURE 3



NOTE:

1. PROPERTY BOUNDARY ESTIMATED FROM DRAWINGS PROVIDED BY OTHERS.

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SAMPLE LOCATIONS FOR SOUTHERN BOUNDARY EXCAVATION AREA AND SOUTHEAST CRUSHED CONCRETE PIT

ARCADIS

FIGURE 4

CITY:(DUBLIN) DIV/GROUP:(SER2) DB:(R. SMITH) LD:(Opt) PIC:(Opt) PM:(T. HITE) TM:(T. HITE) LYR:(Opt)ON=*;OFF=*REF*
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